UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,746	09/30/2003	Harold N. Rosenstock	IS01415MCG	7946

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EXAMINER
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/676,746	ROSENSTOCK ET AL.
	Examiner	Art Unit	
	David Lazaro	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 November 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-29</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-29</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to the amendment filed 11/21/2007.

2.   Claims 1-29 were amended.

3.   Claims 1-29 are pending in this office action.

4.   The objection to the specification is withdrawn based on applicant's substitute specification.

5.   The objection to claim 13 is withdrawn based on applicant's amendment.

6.   The examiner withdraws the rejection of claims 1, 5-6, 11-20 and 24-25 under 35 USC 112, second paragraph, for containing the trademark/trade name Infiniband. See remarks filed 11/21/2007 in regards to INFINIBAND having been adopted by the art as a term having a specific meaning. Particularly, the examiner refers to applicant's specification, paragraph [0024] for the specific meaning.

7.   Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

8.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9.   Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

9.   Claim 1 states the limitation, "*computing a derived version of the set of database elements independent of which of the plurality of subnet managers assumes the master subnet manager function*" (Independent claims 11 and 20 contain similar limitations). Paragraphs [0087]-[0088] of applicant's specification describe derived database elements. Based on the description provided, it appears the derived database elements are not a version of the first set of database elements. This is best seen in Figure 7 which shows Database elements 708-716 as being different than derived data base elements.752-758. In other words, "database elements" provide information that is different than the information provided by "derived database elements" (see also Paragraph [0074] versus Paragraph [0085]-[0086]). The examiner could not find a description in the specification of computing, for example, a derived version of items 710-716 in Fig. 7.

10.   Note also claim 3 (and similarly claims 12 and 22), which states "*wherein the derived version of the set of database elements is identical to the replicated set of database elements and the set of database elements*". The examiner could not find support for such subject matter in the specification. Paragraph [0085] states, "derived database elements 752 are identical". In other words, the derived database elements are identical to other derived database elements. However, there is no description of derived database elements being identical to the replicated set of data elements or the

set of data elements. As discussed above, it appears the "database elements" are

intended to be different information than "derived database elements".

11.   For these reasons, claims 1-29 fail to comply with the written description

requirement.

Claim Rejections - 35 USC § 103

12.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

13.   Claims 1-6, 8-15,17-25 and 27-29 are rejected under 35 U.S.C. 103(a) as being

unpatentable over "InfiniBand™ Management Interoperability" by Gregory Pfister,

published January 7, 2003 (hereinafter Pfister) in view of U.S. Patent 6,778,531 by

Kodialam et al. (Kodialam).

14.   With respect to claims 1 and 20, Pfister teaches a method (and corresponding

computer readable medium) for managing a set of database elements in an

INFINIBAND architecture utilizing a plurality of subnet managers, each subnet manager

capable of assuming a master subnet function, comprising:

        assuming, by one of the plurality of subnet managers, the master subnet

manager function (Pages 8: first 2 paragraphs);

        storing the set of database elements in the assuming subnet manager (Pages 8:

first 2 paragraphs);

replicating the set of database elements in a subnet manager not assuming the

master subnet manager function (Pages 8: first 2 paragraphs);

updating the replicated set of database elements if any changes are made to the

set of database elements (Pages 8: first 2 paragraphs).

Pfister does not explicitly disclose computing computing a derived version of the

set of database elements independent of which of the plurality of subnet managers

assumes the master subnet manager function. Kodialam teaches a technique

computing derived database elements (Col. 3 lines 51-Col. 4 line 21 and Col. 14 lines

46-50: note multicast tree and forwarding tables are exemplarily database elements

based on applicant's specification).

It would have been obvious to one of ordinary skill in the art to use the known

technique for computing derived versions of database elements as taught by Kodialam.

Using the known technique of deriving database elements to provide the storage copies

desired by Pfister (see page 8) would have been obvious to one of ordinary skill.

15.   With respect to claims 2 and 21, Pfister further teaches wherein computing

comprises the master subnet manager function computing the derived version of the

database elements (Page 8: first 2 paragraphs: Master maintains a copy of the data).

16.   With respect to claims 3 and 22, Pfister further teaches wherein the derived

version of the set of database elements is identical to the replicated set of database

elements and the set of database elements regardless of which of the plurality of subnet

managers assumes the master subnet manager function (Page 8: first 2 paragraphs -

as each manager maintains a copy of the data, each manager can assume master operations using their copy of the data).

17.   With respect to claims 4 and 23, Pfister further teaches wherein computing comprises computing the derived version of the set of database elements deterministically regardless of which of the plurality of subnet managers assumes the master subnet manager function (Page 8: first 2 paragraphs - copies are synchronized through "two-phase commit protocol" for example) and (Kodialam: Fig. 4 and 5).

18.   With respect to claims 5 and 24, Pfister further teaches the master subnet manager function initializing the InfiniBand architecture subnet utilizing the derived version of the set of database elements (Pages 7 first paragraph and Page 8 first 2 paragraphs: managers contain the data for their subnet, standby assumes master operations with its copy of data).

19.   With respect to claims 6 and 25, Pfister further teaches creating a replicated set of database elements at a standby subnet manager (Page 8 first paragraph: each manager maintains a replicated database); the standby subnet manager assuming the master subnet manager function (Page 8 second paragraph: standby assumes master operations); the master subnet manager function computing the derived version of the set of database elements (Page 8 second paragraph: standby assumes master operations using its copy of the replicated data); and the master subnet manager using the replicated set of the database elements and the derived version of the set of database elements to initialize the InfiniBand architecture subnet (Page 8 second paragraph: standby assumes master operations using its copy of the replicated data).

20.   With respect to claims 8, 17 and 27, Pfister further teaches wherein the derived

version of the set of database elements comprises a tree determination (Kodialam: Col.

3 lines 51-Col. 4 line 21 and Col. 14 lines 46-5)

21.   With respect to claims 9, 18 and 28, Pfister further teaches wherein the derived

version of the set of database elements comprises a forwarding table assignment

(Kodialam: Col. 3 lines 51-Col. 4 line 21 and Col. 14 lines 46-5).

22.   With respect to claims 10, 19 and 29, Pfister further teaches wherein the

forwarding table assignment comprises one of a linear forwarding table assignment and

a multicast forwarding table assignment (Kodialam: Col. 3 lines 51-Col. 4 line 21 and

Col. 14 lines 46-5)

23.   With respect to claim 11, Pfister teaches an architecture node configured to form

at least a portion of an INFINIBAND architecture subnet having a plurality of

architecture nodes, a plurality of subnet managers configured to store database

elements, and a master subnet manager function, the architecture node comprising:

     - a first subnet manager of the plurality of subnet managers capable of assuming

the master subnet manager function (Pages 8: first 2 paragraphs); and

     a subnet manager function configured to manage the database elements if the

first subnet manager assumes the master subnet manager function, generate a

replicated version of the database elements if a second subnet manager assumes the

master subnet manager function (Pages 8: first 2 paragraphs).

     Pfister does not explicitly disclose computing a derived version of the database

elements independently of which of the plurality of subnet managers assumes the

master subnet manager function. Kodialam teaches a technique computing derived database elements (Col. 3 lines 51-Col. 4 line 21 and Col. 14 lines 46-50: note multicast tree and forwarding tables are exemplarily database elements based on applicant's specification).

It would have been obvious to one of ordinary skill in the art to use the known technique for computing derived versions of database elements as taught by Kodialam. Using the known technique of deriving database elements to provide the storage copies desired by Pfister (see page 8) would have been obvious to one of ordinary skill.

24. With respect to claim 12, Pfister further teaches wherein the derived version of the database elements computed are identical to the database elements and the replicated version of the database elements regardless of which of the plurality of subnet managers assumes the master subnet manager function (Page 8: first 2 paragraphs - as each manager maintains a copy of the data, each manager can assume master operations using their copy of the data).

25. With respect to claim 13, Pfister further teaches wherein the derived version of the database elements are computed deterministically regardless of which of the plurality of subnet managers assumes the master subnet manager function (Page 8: first 2 paragraphs - copies are synchronized through "two-phase commit protocol" for example).

26. With respect to claims 14, Pfister further teaches the master subnet manager function is configured to initialize the InfiniBand architecture subnet utilizing the derived version of the database elements (Pages 7 first paragraph and Page 8 first 2

paragraphs: managers contain the data for their subnet, standby assumes master

operations with its copy of data).

27.   With respect to claims 15, Pfister further teaches wherein the replicated version

of the database elements is created at the InfiniBand architecture node (Page 8 first

paragraph: each manager maintains a replicated database); and wherein the master

subnet manager is configured to use the replicated version of the database elements

and the derived version of the database elements to initialize the InfiniBand architecture

subnet (Page 8 second paragraph: standby assumes master operations using its copy

of the replicated data).

28.   Claims 7 16 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Pfister in view of Kodialam and in further view of "IP over InfiniBand (IPoIB)

Architecture" an Internet Draft, December 15, 2001, by Vivek Kashyap (hereinafter

Kashyap).

29.   With respect to claims 7, 16 and 26, Pfister teaches all the limitations of claims 1,

11 and 20 respectively, but does not explicitly disclose the derived version of the

database elements comprises a local identifier assignment.

        Kashyap teaches that data managed and used for operations by a subnet

manager in an Infiniband architecture can include a local identifier assignment (Page 4,

local ID - LID).

        It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify Pfister as indicated by Kashyap such that the derived

version of the database elements comprises a local identifier assignment. One would

be motivated to have this, as it is desirable to maintain high availability, which would

include the data managed and operated upon by subnet managers, such as the local

identifier assignment (In Pfister: Page 7 first 3 paragraphs).

Conclusion

30.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to David Lazaro whose telephone number is 571-272-

3986. The examiner can normally be reached on 8:30-5:00 M-F.
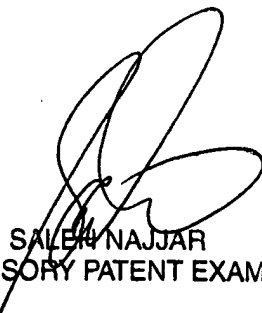
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David Lazaro
February 4, 2008

SALEH NAJJAR
SUPERVISORY PATENT EXAMINER